

**Remarks:**

Claims 1-9 and 11-43 are pending in this application; claims 2-9, 13, 22, and 24-43 have been withdrawn from consideration. In the Office Action mailed August 26, 2003, the Office rejected claims 1, 12, 14-17, 19-21, and 23, and objected to claims 11 and 18. With the present Response, all of the pending claims are amended.

**Claim Rejections - 35 U.S.C. § 102**

The Office rejects claim 1 under 35 U.S.C. § 102(b) as being anticipated by Mathur *et al.* (Indian Journal of Mycology and Plant Pathology 20(2) 192-193 (1990)). The Office asserts that Mathur teaches a composition for controlling stripe disease infection in barley comprising 2,4-D, *i.e.*, 2,4-dichlorophenoxy acetic acid, and a composition for controlling stripe disease in barley comprising copper, and that such compositions are applied to barley plants. The Office asserts that it is inherent that application of 2,4-D and copper onto barley plants would induce isoflavone production and induce disease resistance in the barley plant.

Initially, Applicants note that the Office provided only an abstracted version of the cited article. Thus, it is inaccurate for the Office to assert that it has relied upon, or even referred to, the entire document. If the Office maintains that the entire article was used, then Applicants respectfully request that they be provided a copy of the entire article. If the Office chooses only to rely on the abstracted version of the article, which was sent to Applicants, then Applicants respectfully request the written record reflect that fact.

Turning to the substance of the rejection, Applicants note that the Office has relied upon the disclosure of Mathur *et al.* for its reference to applying 2,4-dichlorophenoxy acetic acid to barley plants. Without explicitly stating, the Office has read Applicants' claimed compound V

as encompassing 2,4-dichlorophenoxy acetic acid. The Office then concludes, without providing any support, that application of 2,4-dichlorophenoxy acetic acid would necessarily induce isoflavone production. Applicants respectfully submit that the Office's assertions, without more, do not establish a *prima facie* case of anticipation.

A *prima facie* case of anticipation requires that each and every element of the claim be found in a single reference. If the Office relies upon a theory of inherency, then it is the Office's burden to show why that particular element would *necessarily* be present. It is not enough that it *might* be present, or that it would be present under *some conditions*, it must necessarily be present. In this instance, the Office implies that application of 2,4-D would always induce production of isoflavones. But the Office has not provided any support for that implication. In the absence of such support, Applicants submit that the Office has failed to establish a *prima facie* case of anticipation.

Nevertheless, solely in an effort to advance prosecution, Applicants have amended claim 1 to recite that R12 is a branched aliphatic chain. As there is no branching in 2,4-dichlorophenoxy acetic acid, Applicants respectfully submit that the disclosure of Mathur *et al.* does not anticipate claim 1 as currently drafted. Applicants respectfully request the Office withdraw the rejection of claim 1 in view of Mathur *et al.*

The Office rejects claims 1 and 15-17 under 35 U.S.C. § 102(b) as allegedly anticipated by Gillespie *et al.* (WO 98/17109). The Office asserts that Gillespie *et al.* teaches applying a composition comprising 2,4-D (2,4-dichlorophenoxy acetic acid), which composition may further comprise additional compounds, onto the foliage of a plant. The Office again asserts, without providing any support, that such application would necessarily result in isoflavone induction.

Applicants respectfully submit that the Office has again failed to make a *prima facie* case of anticipation. However, as noted above, Applicants have amended claim 1, upon which claims 15-17 ultimately depend, to recite that R12 is a branched aliphatic chain. And as noted above, 2,4-dichlorophenoxy acetic acid does not include a branched aliphatic chain. Thus, Applicants respectfully submit that the disclosure of Gillespie *et al.* does not anticipate claim 1 as currently drafted. Applicants respectfully request the Office withdraw the rejection of claims 1 and 15-17 in view of Gillespie *et al.*

The Office rejects claims 1, 15, 19, and 20 under 35 U.S.C. § 102(b) as allegedly anticipated by Chamblee *et al.*<sup>1</sup> (U.S. Patent No. 4,274,861). The Office asserts that Chamblee *et al.* teaches applying a composition comprising 2,4-D (2,4-dichlorophenoxy acetic acid) and alcohol to a soybean plant. The Office asserts, without providing any support, that such application would necessarily result in isoflavone induction.

Applicants respectfully submit that the Office has failed to make a *prima facie* case of anticipation. However, as noted above, Applicants have amended claim 1, upon which claims 15, 19, and 20 ultimately depend, to recite that R12 is a branched aliphatic chain. As noted, 2,4-dichlorophenoxy acetic acid does not include a branched aliphatic chain. Thus, Applicants respectfully submit that the disclosure of Chamblee *et al.* does not anticipate claim 1 as currently drafted. Applicants respectfully request the Office withdraw the rejection of claims 1, 15, 19, and 20 in view of Chamblee *et al.*

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<sup>1</sup> This document is issued to Henderson *et al.*, Henderson being the first named inventor. Chamblee is the second inventor listed on the patent.

Claim Rejections - 35 U.S.C. § 103

The Office rejects claims 12, 14, 21, and 23 under 35 U.S.C. § 103(a) as being unpatentable over Mathur *et al.* The Office asserts that Mathur teaches a composition for controlling stripe disease infection in barley comprising 2,4-D (2,4-dichlorophenoxy acetic acid) and a composition for controlling stripe disease in barley comprising copper, and that such compositions are applied to barley plants. The Office admits that Mathur *et al.* does not teach a composition comprising *both* 2,4-D and copper, but that such combination would have been obvious. The Office asserts that one would have been motivated to combine 2,4-D and copper into a single composition to “make the most effective composition” for controlling stripe infection in barley.

A *prima facie* case of obviousness has three requirements. First, each element of the rejected claim must be found in the modified or combined references. Second, there must be some expectation of success in the modification or combination. Finally, there must be motivation to make the change or combination in the first place. In this rejection, none of these requirements have been satisfied.

Without explicitly stating, the Office has read Applicants’ claimed compound V as encompassing 2,4-dichlorophenoxy acetic acid, and Applicants’ claimed enhancing compound as encompassing copper. However, the Office fails to provide any support for its implied assertion that 2,4-dichlorophenoxy acetic acid would *necessarily* induce isoflavone production, or that copper would *necessarily* enhance the release of isoflavones or enhance aglycone incorporation into glyceollin. Thus, the Office has failed to establish that all of the claimed elements are present in the modified teaching of Mathur *et al.*

Also, the Office has failed to provide any evidence that a) isoflavone production would be induced, and that b) isoflavone release would be enhanced or that aglycone incorporation into glyceollin would be enhanced. The Office has provided no reason to believe that the combination of 2,4-dichlorophenoxy acetic acid and copper would result in the claimed invention. Thus, the Office has failed to satisfy the second requirement of a *prima facie* case of obviousness, *i.e.*, that there be an expectation of success.

Finally, despite the Office's lip service to the requirement for motivation, motivation to make the change to Mathur *et al.*'s teachings is absent. There is nothing in Mathur *et al.* that would lead one of skill in the art to combine 2,4-D with copper. There is nothing in Mathur *et al.* that would suggest an additive or even synergistic effect in the combination. There is no reason to believe that the combination would achieve any greater effect than either agent alone.

Indeed, if one were relying solely on the abstract of Mathur *et al.*, one might choose zinc and boron, but not 2,4-D and copper. Copper was identified by Mathur *et al.* as being one of the least effective of the minerals tested, and 2,4-D was even less effective. If one were to rely solely on the teachings of Mathur *et al.*, one would surely not pick copper to be combined with 2,4-D. Thus, there is simply nothing in Mathur *et al.* to support the Office's assertion that one skilled in the art would have combined 2,4-D with copper to "make the most effective composition."

In view of these points, Applicants respectfully submit that a *prima facie* case of obviousness has not been made in this case. Moreover, Applicants have amended claims 12 and 21 to recite that R12 is a branched aliphatic chain. As 2,4-dichlorophenoxy acetic acid does not have a branched aliphatic chain, it does not meet the limitations of the claim. For this reason as well, Applicants submit that a *prima facie* case of obviousness does not exist in this case.

### Claim Objections

The Office objects to claims 11 and 18 as depending from a rejected base claim but being allowable if rewritten in independent form. In response, Applicants submit that the base claims are allowable in view of the amendments and remarks herein, and that the objection is obviated by these amendments and remarks. Applicants respectfully request the withdrawal of the objections.

### Conclusion

In view of the foregoing amendments and remarks, Applicants submit that the claims are in condition for allowance. Applicants respectfully request reconsideration and re-examination of this application and a prompt issuance of a Notice of Allowance. If action can be taken to expedite allowance of this application, the Office is invited to contact the undersigned attorney.

Respectfully submitted,

Date:

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